



ABSTRACT

B1 This invention relates generally to forming an array of single-wall carbon nanotubes (SWNT) and compositions thereof. In one embodiment, a homogeneous population of SWNT molecules is used to produce a substantially two-dimensional array made up of single-walled nanotubes aggregated in substantially parallel orientation to form a monolayer extending in directions substantially perpendicular to the orientation of the individual nanotubes. Using SWNT molecules of the same type and structure provides a homogeneous array. By using different SWNT molecules, either a random or ordered heterogeneous structure can be produced by employing successive reactions after removal of previously masked areas of a substrate. In one embodiment, SWNT molecules may be linked to a substrate through a linker moiety such as -S-, -S-(CH₂)_n-, -NH-, -SiO₃(CH₂)₃NH- or the like.

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